

WHAT IS CLAIMED IS:

1. A control method for typesetting a text line, comprising:
  - setting a coordination line for the text line to coordinate a plurality of characters for typesetting the text line;
  - determining dimensions of each of the plurality of characters to be typeset on the text line;
  - determining an embox for each of the plurality of characters, the vertical and horizontal size of each embox being said determined character dimensions,
  - comparing the plurality of characters to be typeset on the text line with at least one preselected reference character belonging to the same font, and determining a coordination point for each of the plurality of characters in their said respective embox based on the result of the comparison; and
  - coordinating said coordination point for each of the plurality of characters with said coordination line to typeset said plurality of characters on the text line.
2. The method of claim 1, wherein said dimensions are point dimensions and said at least one reference character has the same point dimension as each of the plurality of characters to undergo said coordination.
3. The method of claim 2, wherein said at least one character is a CJK font character.
4. The method of claim 1, wherein said reference character is a European-language en uppercase letter having a cap height.
5. The method of claim 4, wherein said reference character is an en H or an en X.
6. The method of claim 1, wherein comparing each of the plurality of characters comprises:
  - determining a glyph bounding box for said reference character;
  - centrally positioning said bounding box in said embox; and
  - determining the coordination point of said embox.

7. The method of claim 6, wherein said coordination point is an intersection point with the top, middle or bottom of said embox, or with said bounding box.

5 8. The method of claim 1, further comprising:

finding the largest character having the largest point dimension among said plurality of characters;

setting the line height to be the height of said largest character; and

centrally positioning said plurality of characters that has been coordinated with a coordination line within said line height.

10 9. The method of claim 1, wherein comparing each of the plurality of characters comprises:

determining the glyph bounding box for said reference character;

determining the average value for the top, bottom, left, and right differences between said embox and said bounding box;

determining an ideographic character face box located inside and separated from said embox edges by exactly said average value; and

determining said coordination point based on said ideographic character face box.

20 10. The method of claim 9, wherein  $N$  ( $N \geq 2$ ) reference characters are present, and determining the average value comprises dividing the sum of the top, bottom, left, and right differences obtained for the  $N$  reference characters by  $4N$  to determine said average value.

25 11. The method of claim 1, wherein comparing each of the plurality of characters comprises:

determining a glyph bounding box for said reference character;

determining a first average value for the top and bottom difference between said embox and said bounding box;

30 determining a second average value for the left and right difference;

determining an ideographic character face box located inside and separated from said embox edges by exactly said average value; and

determining said coordination point based on said ideographic character face box.

5 12. The method of claim 9, wherein the said at least one reference character has a glyph whose shape is close to square.

13. The method of claim 12, wherein said at least one reference character include the Japanese ideographs “utsu” and “naga.”

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14. A computer program product, stored on a machine-readable medium, comprising instructions operable to cause a programmable processor to:

set a coordination line for the text line to coordinate a plurality of characters for typesetting the text line,

– determine the dimensions of each of the plurality of characters to be typeset on the text line,

determine an embox for each of the plurality of characters, the vertical and horizontal size of each embox being said determined character dimensions,

compare each of the plurality of characters to be typeset on the text line with at least one preselected reference character belonging to the same font, and determine a coordination point for each of the plurality of characters in their said respective embox based on the result of the comparison, and

coordinate said coordination point for each of the plurality of characters with said coordination line to typeset said plurality of characters on the text line.

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15. The product of claim 14, wherein said dimensions are point dimensions and said at least one reference character has the same point dimension as each of the plurality of characters to undergo said coordination.

30 16. The product of claim 15, wherein said at least one character is a CJK font character.

17. The product of claim 14, wherein said reference character is a European-language en uppercase letter having a cap height.

18. The product of claim 17, wherein said reference character is an en H or an en X.

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19. The product of claim 14, wherein the instructions to compare each of the plurality of characters comprise instructions to:

determine a glyph bounding box for said reference character;

centrally position said bounding box in said embox; and

determine the coordination point of said embox.

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20. The product of claim 19, wherein said coordination point is an intersection point with the top, middle or bottom of said embox, or with said bounding box.

21. The product of claim 14, further comprising instructions to:

find the largest character having the largest point dimension among said plurality of characters;

set the line height to be the height of said largest character; and

centrally position said plurality of characters that has been coordinated with a coordination line within said line height.

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22. The product of claim 14, wherein the instructions to compare each of the plurality of characters comprise instructions to:

determine the glyph bounding box for said reference character;

determine the average value for the top, bottom, left, and right differences between said embox and said bounding box;

determine an ideographic character face box located inside and separated from said embox edges by exactly said average value; and

determine said coordination point based on said ideographic character face box.

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23. The product of claim 22, wherein N ( $N \geq 2$ ) reference characters are present, and the instructions to determine the average value comprise dividing the sum of the top, bottom, left, and right differences obtained for the N reference characters by  $4N$  to determine said average value.

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24. The product of claim 14, wherein the instructions to compare each of the plurality of characters comprise instructions to:

determine a glyph bounding box for said reference character;

determine a first average value for the top and bottom difference between said embox and said bounding box;

determine a second average value for the left and right difference;

determine an ideographic character face box located inside and separated from said embox edges by exactly said average value; and

determine said coordination point based on said ideographic character face box.

25. The product of claim 22, wherein the said at least one reference character has a glyph whose shape is close to square.

26. The product of claim 25, wherein said at least one reference character include the Japanese ideographs “utsu” and “naga.”

27. A desktop publishing system for controlling typesetting of a text line, comprising:  
a desktop publishing processing control device provided with a font file and with typesetting control means, the font file containing character font information for performing typesetting;

a display device for displaying data that is being typeset; and  
input means for receiving user input;  
said typesetting control means having a text line typesetting control means adapted to arranging a plurality of characters to be coordinated with a coordination line of a text line by determining an embox for each of the plurality of characters, each embox having a vertical and horizontal size corresponding to the dimensions of its associated character,

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determining a coordination point by comparing each of the plurality of said characters with at least one preselected reference character belonging to the same font, and

performing line typesetting processing by coordinating each determined coordination point with said coordination line.